

Appl. No. 10/743,985
Amdt. dated 02/28/2007
Response to Office Action of 11/28/2006

Attorney Docket No.: N1085-00168
[TSMC 2003-0219]

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

- 1 1 - 10. (Cancelled)
- 1 11. (Currently Amended): An SOI device having a gate, comprising:
2 oxygen ions providing discrete implant[[s]] regions in a substrate of an SOI
3 device, the discrete implant regions extending to a surface of the substrate; and
4 one or more additional gate regions covering all discrete implant[[s]] regions
5 under the one or more additional gate regions, and
6 a gate oxide layer covering but not encroaching the discrete implant regions and
7 being under the one or more additional gate regions,
8 the ions ~~forming thicker gate oxide regions, and~~ reducing substrate resistance
9 under each of the additional gate regions.
- 1 12. (Original): The SOI device as recited in claim 11, further comprising:
2 implanted ions in the substrate, the one or more additional gate regions covering
3 the implanted ions.
- 1 13. (Currently Amended) The SOI device as recited in claim 11, ~~further comprising: a~~
2 wherein the gate oxide layer has the same thickness over the discrete implant regions
3 and over regions other than the discrete implant regions covering the ions and being
4 under the one or more additional gate regions.
- 1 14. (Currently Amended): The SOI device as recited in claim 11, further comprising:
2 a gate of the SOI device;
3 ~~a gate oxide under the gate and under the one or more additional gate regions;~~
4 and
5 ~~the gate oxide covering the ions.~~

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1 15. (Currently Amended): The SOI device as recited in claim 11, further comprising:
2 a gate electrode layer forming an SOI device gate and the one or more additional
3 gate regions; and
4 ~~a gate oxide layer under the gate and under the one or more additional gate~~
5 ~~regions.~~

1 16. (Currently Amended): The SOI device as recited in claim 11, further comprising:
2 an SOI device gate and the one or more additional gate regions being formed
3 from a gate electrode layer; and
4 ~~a gate oxide layer~~ wherein the gate oxide layer is under the gate and under the
5 one or more additional gate regions.

1 17. (Currently Amended): The SOI device as recited in claim 11, further comprising:
2 the gate oxide layer including a thin gate oxide layer, having and a thicker gate
3 oxide layer covering the ~~ions~~ discrete implant regions;
4 an SOI device gate on the thin gate oxide layer; and
5 the one or more additional gate regions being on the thicker gate oxide layer.

1 18. (Currently Amended): The SOI device as recited in claim 11, further comprising:
2 the thicker gate oxide layer being a selective epitaxy growth.

1 19. (Original): The SOI device as recited in claim 11, further comprising:
2 the substrate having an STI enclosure for the ions.

1 20-35. (Cancelled)

1 36. (New): An SOI device having a gate, comprising:
2 oxygen ions providing discrete implant regions in a substrate of an SOI device,
3 the discrete implant regions extending to a surface of the substrate;

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- 4 one or more additional gate regions covering the discrete implant regions, and,
5 a gate oxide layer covering the discrete implant regions and being under the one
6 or more additional gate regions, the gate oxide layer having the same thickness over
7 the discrete implant regions and over regions other than the discrete implant regions,
8 the ions reducing substrate resistance under each of the additional gate regions.